

Review of the Draft Final Parcel G Removal Site Evaluation Work Plan Addendum
Hunters Point Naval Shipyard, San Francisco, California, April 2019

Addendum Additional Comments

Please add the following comments:

General Comment #8, new item e.

- e. If the scanning MDC for land areas or for the soil sorting system is determined to not be below any of the ROC RGs, an analysis of how many samples will be required to be collected based on the elevated MDC using the MARSSIM formulas for elevated measurement comparisons to ensure a sufficient number of samples are collected to adequately characterize site survey units (see Section 5.5.2.4 Determining Data Points for Small Areas of Elevated Activity.)
1. The Parcel G Work Plan Addendum Section 4.3 (Timed Soil Sampling Activities) states that soil will be placed on the belt for screening in two (2) inch thick layers, however the Work Plan states that soil will be placed in 6 inch layers on the belt. Based on the soil volume, please document how the same number of samples will be collected for each ESU and SFU of 152 m³ regardless of whether the soil layer is 6 inches or 2 inches on the survey belt. For example, if the soil volume equals 152 m³ and is placed in 6 inch layers, the surface area would equate to 1,013 m², whereas if it is laid out in 2 inches, the surface area would cover 3,040 m². Please clarify how thick the soil layers will be on the soil sorter belt, and ensure that based on the total volume passing under the detectors, the same number of samples are collected for each ESU and SFU regardless of soil thickness on the belt.
 2. Section 4.3 (Timed Soil Sampling Activities) states that biased soil samples will be collected from the soil material that has been discharged to the Diverted Pile bin at a frequency equal to the volumetric frequency of sampling for ESU or SFU material. However, this approach does not appear to be adequate because sampling the diverted soil which caused the system to alarm after it has been diverted to a larger pile of soil and mixed, may result in under-estimating the presence of contamination. Therefore, biased soil samples should be collected from the belt in the same sector that alarmed at the time of the system alarm, in addition to any samples collected from the diverted soil pile on a systematic basis for waste characterization purposes.
 3. The variance from both the background samples and on-going site sample results should be evaluated to determine the appropriate number of samples for on-going site sampling, rather than just relying on the background samples. Note that Appendix A (Comments and Response to Comments), the Responses to Comments on Draft Parcel G Removal Site Evaluation Work Plan dated June 2018, EPA Comment #12 on Section 3.4.1, (Number of Samples) stated the following: "Although under some circumstances, 18 samples per survey unit could be acceptable as a default starting point before sampling results are available, once

these results are available, then the number of samples for subsequent survey units should be based on calculations using variability found in actual data. For example, EPA's statistician used background data the Navy had previously collected from five reference areas and calculated that 25 samples per survey units would be needed to achieve your proposed 99% confidence level if soil from TUs/SUs are compared to reference background areas using a Wilcoxon Rank Sum (WRS) Test. EPA recommended starting with this default number of samples. Once new data are collected, they can also be used to recalculate the appropriate number of samples depending on the statistical tests which will be utilized to establish compliance. The new number of samples could be higher or lower than previously used. Note that the variance from site investigative samples may be larger than the variance based on reference background samples, therefore the variance from samples collected in investigative survey units should be used to calculate the number of samples that should be collected in other investigative survey units. Also, variance should be determined using the same radioanalytical method as that which will be used for additional data collection. For instance, the variance for gamma spectrometry laboratory data should be used to determine the number of samples that are required for survey units where gamma spectrometry laboratory analysis will be conducted." In addition, if the variance determined from the background study is different than the variance determined for site samples, the more conservative of the two values should be used to calculate the required number of systematic samples will need to be collected for site investigation.